Reasoning and Problem Solving
Step 2: Factors

National Curriculum Objectives:

Mathematics Year 5: (5C5a) Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers

Differentiation:

Questions 1, 4 and 7 (Problem Solving)
Developing Find missing factors within a multiplication square where the end number for each column and row are the product (using knowledge of the 2, 3, 5, and 10 times table).
Expected Find missing factors within a multiplication square where the end number for each column and row are the product (using numbers using knowledge of times table facts up to 12 x 12).
Greater Depth Find missing factors within a multiplication square where the end number for each column and row are the product (knowledge of known times table facts to 12 x 12 and beyond).

Questions 2, 5 and 8 (Problem Solving)
Developing Find missing factors and products using the two clues provided (using knowledge of the 2, 3, 5, and 10 times table).
Expected Find missing factors and products using the three clues provided (numbers using knowledge of times table facts up to 12 x 12).
Greater Depth Find missing factors and products using the three clues provided (knowledge of known times table facts to 12 x 12 and beyond).

Questions 3, 6 and 9 (Reasoning)
Developing Identify if a statement regarding factors is correct and give reasons for the answer (using knowledge of the 2, 3, 5, and 10 times table).
Expected Identify if a statement regarding factors is correct and give reasons for the answer (numbers using knowledge of times table facts up to 12 x 12).
Greater Depth Identify if a statement regarding factors is correct and give reasons for the answer (knowledge of known times table facts to 12 x 12 and beyond).

More Year 5 Multiplication and Division resources.

Did you like this resource? Don't forget to review it on our website.

Factors

1a. Find the missing factors to complete the square.

		15
	2	20
30	10	

D PS

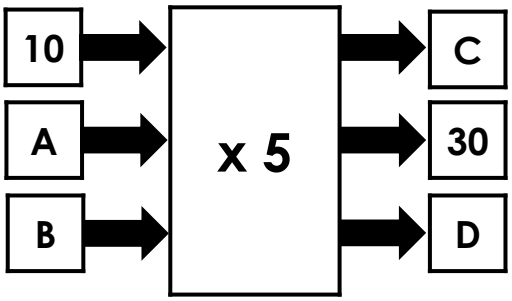
Factors

1b. Find the missing factors to complete the square.

10		50
		6
20	15	

D PS

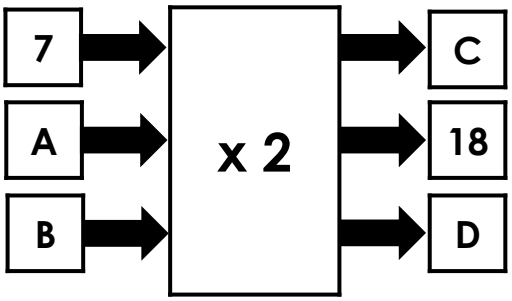
2a. Three factors are put into the machine below. Use the clues to work out what the missing factors and products could be.



B is an odd number.
D is half of C.

D PS

2b. Three factors are put into the machine below. Use the clues to work out what the missing factors and products could be.

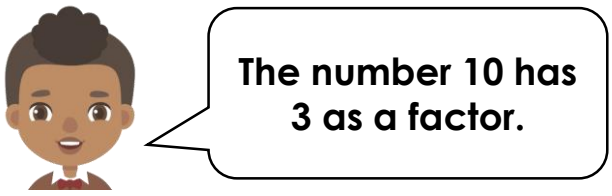


B is an even number, less than 10.
D is larger than C, but smaller than 18.

D PS

3a. Class 5 have been finding factors.

Arthur says,

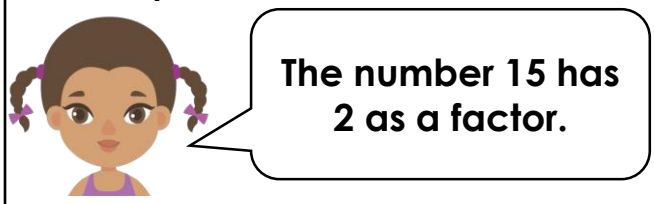


Is he correct? Prove it.

D R

3b. Class 5 have been finding factors.

Linda says,



Is she correct? Prove it.

D R

Factors

4a. Find the missing factors to complete the square.

7		35
		12
21	20	

E PS

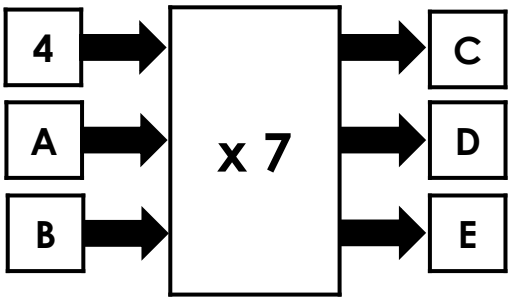
Factors

4b. Find the missing factors to complete the square.

		42
4		24
28	36	

E PS

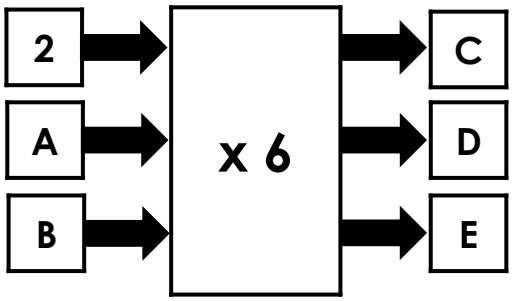
5a. Three factors are put into the machine below. Use the clues to work out what the missing factors and products could be.



E is double C.
A is an even number less than 5.
D is less than C.

E PS

5b. Three factors are put into the machine below. Use the clues to work out what the missing factors and products could be.



D is double C.
B is an odd number.
E is bigger than D but smaller than 40.

E PS

6a. Class 5 have been finding factors.

Polly says,

The number 24 has got six different factors.

Is she correct? Prove it.

E R

6b. Class 5 have been finding factors.

Tommy says,

The number 16 has got six different factors.

Is he correct? Prove it.

E R

Factors

7a. Find the missing factors to complete the square.

4		60
		36
48	45	

GD PS

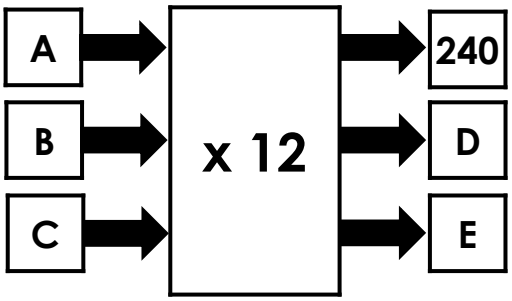
Factors

7b. Find the missing factors to complete the square.

		180
	11	44
36	220	

GD PS

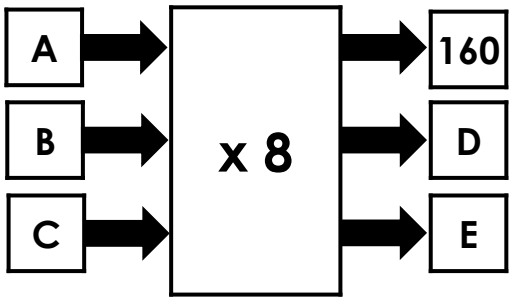
8a. Three factors are put into the machine below. Use the clues to work out what the missing factors and products could be.



B is half of A.
C is an odd number.
E is half of D.

GD PS

8b. Three factors are put into the machine below. Use the clues to work out what the missing factors and products could be.



B is 6 less than A.
C is an odd number.
E is half of D.

GD PS

9a. Class 5 have been finding factors.

Alfie says,

The number 56 has got ten different factors.

Is he correct? Prove it.

GD R

9b. Class 5 have been finding factors.

Ada says,

The number 66 has got four different factors.

Is she correct? Prove it.

GD R

Reasoning and Problem Solving
Factors

Developing

1a.

3	5	15
10	2	20
30	10	

2a. A = 6, B = 5, C = 50, D = 25

3a. Arthur is incorrect. The factors of 10 are: 1, 2, 5 and 10.

Expected

4a.

7	5	35
3	4	12
21	20	

5a. A = 2, B = 8, C = 28, D = 14, E = 56

6a. Chloe is incorrect. 24 has got eight different factors: 1, 2, 3, 4, 6, 8, 12, 24

Greater Depth

7a.

4	15	60
12	3	36
48	45	

8a. A = 20, B = 10, C = 5, D = 120, E = 60

9a. Alfie is incorrect. 56 has got eight different factors: 1, 2, 4, 7, 8, 14, 28 and 56

Reasoning and Problem Solving
Factors

Developing

1b.

10	5	50
2	3	6
20	15	

2b. A = 9, B = 8, C = 14, D = 16

3b. Linda is incorrect. The factors of 15 are: 1, 3, 5, 15.

Expected

4b.

7	6	42
4	6	24
28	36	

5b. A = 4, B = 5, C = 12, D = 24, E = 30

6b. Tommy is incorrect. 16 has got 5 different factors: 1, 2, 4, 8 and 16

Greater Depth

7b.

9	20	180
4	11	44
36	220	

8b. A = 20, B = 14, C = 7, D = 112, E = 56

9b. Ada is incorrect. 66 has got eight different factors: 1, 2, 3, 6, 11, 22, 33 and 66